Schematic: Expansion Accessory

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20	10/100/1000 ETHERNET
21	RPI EXP CONN, LED, BUTTON

Revision History

DATE	REVISION	DESCRIPTION
Nov. 23 2020	v0.1	1. Initial release
Nov. 25 2020	v0.2	1. Add USB Hub circuit 2. Modify reset circuit of KSZ9031, removed interrupt funcfion 3. Change 1V2 output form LDO3 to BUCK5
Nov. 25 2020	v0.3	1. Add Power down control and power on button

seeed

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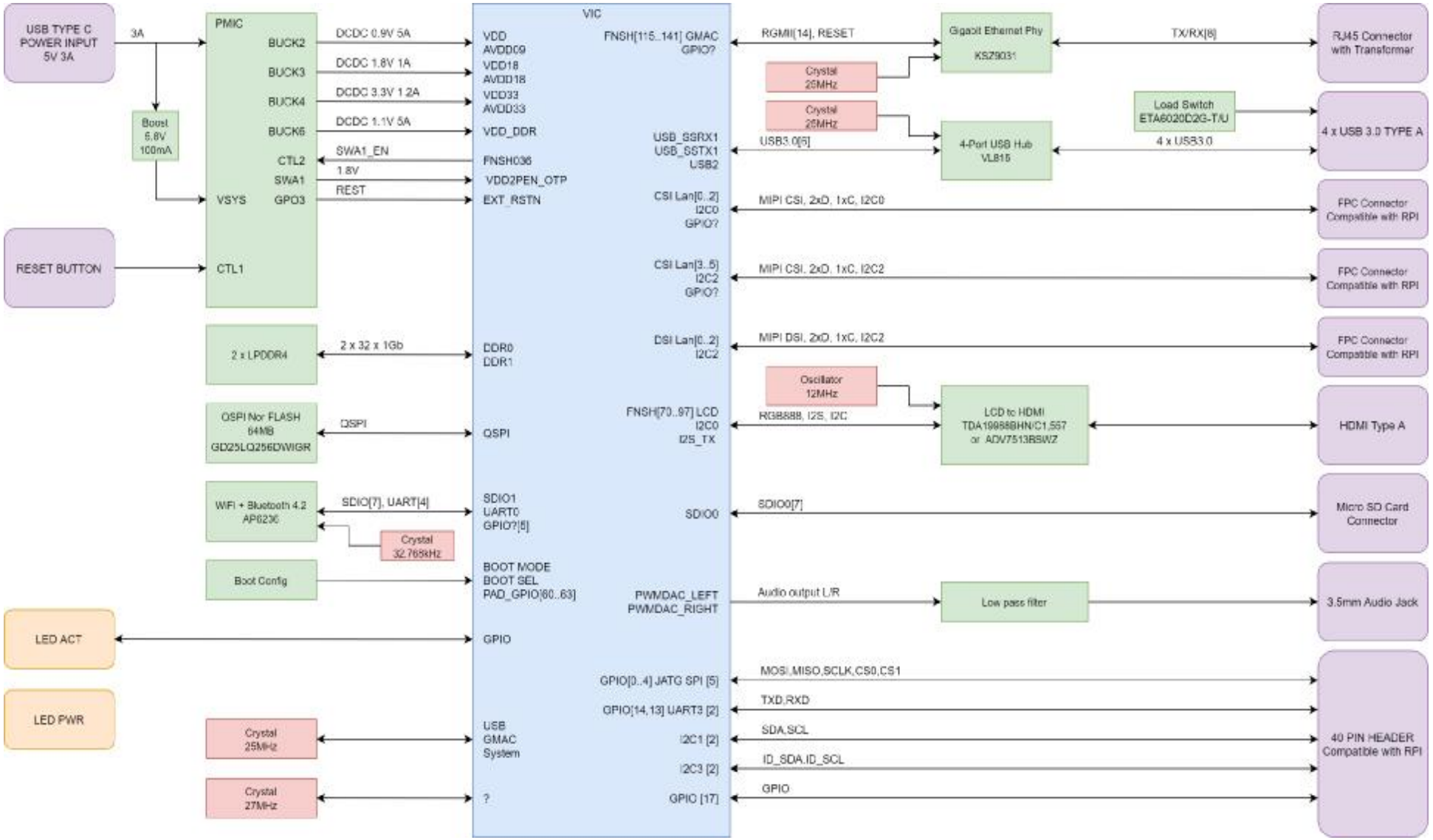
Title: RV PI

Size: A3	Document Number: 01_Title/Revision History	Rev: v0.3
Draw By: <Drawing>	Date: Monday, December 07, 2020	Sheet: 1 of 21



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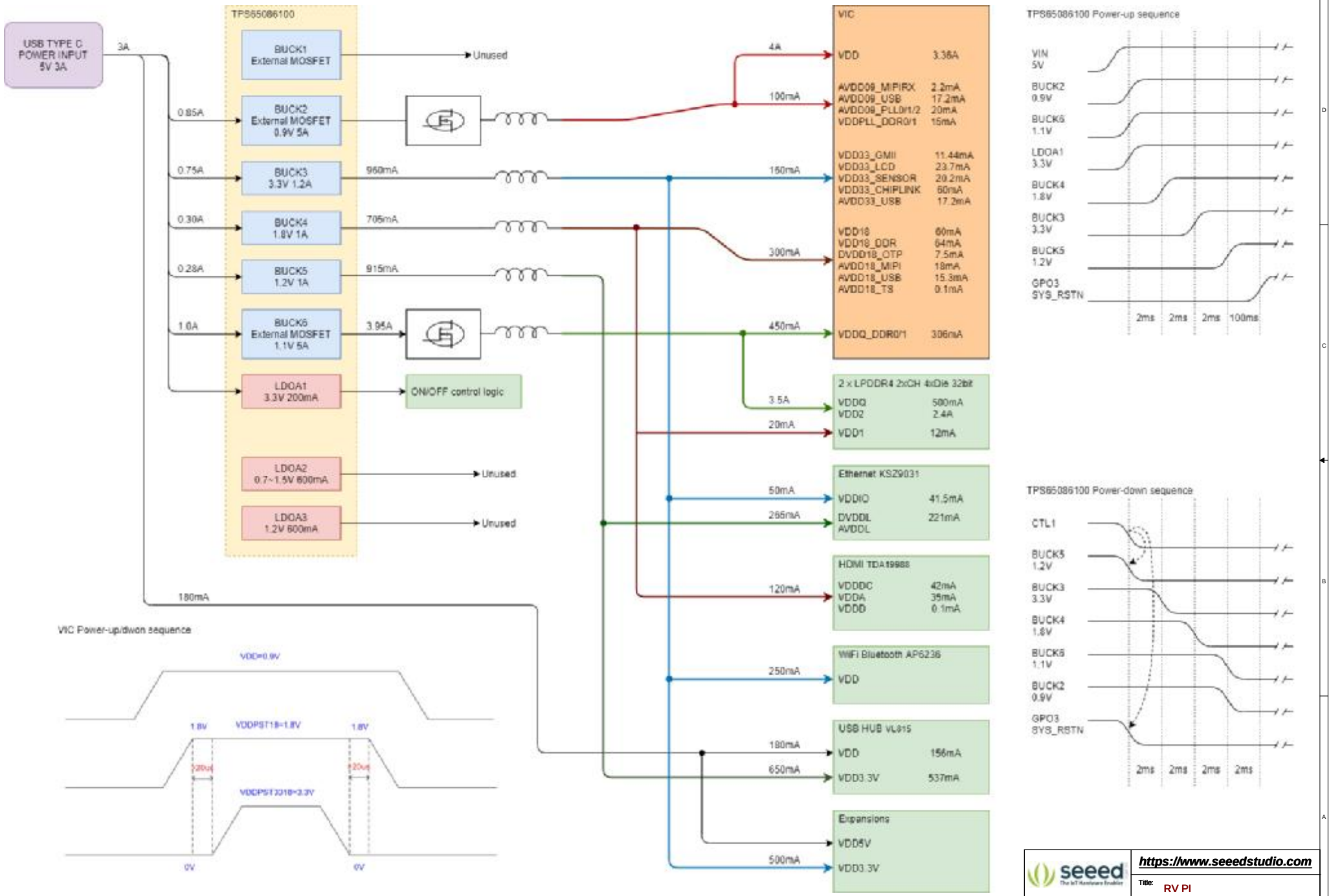

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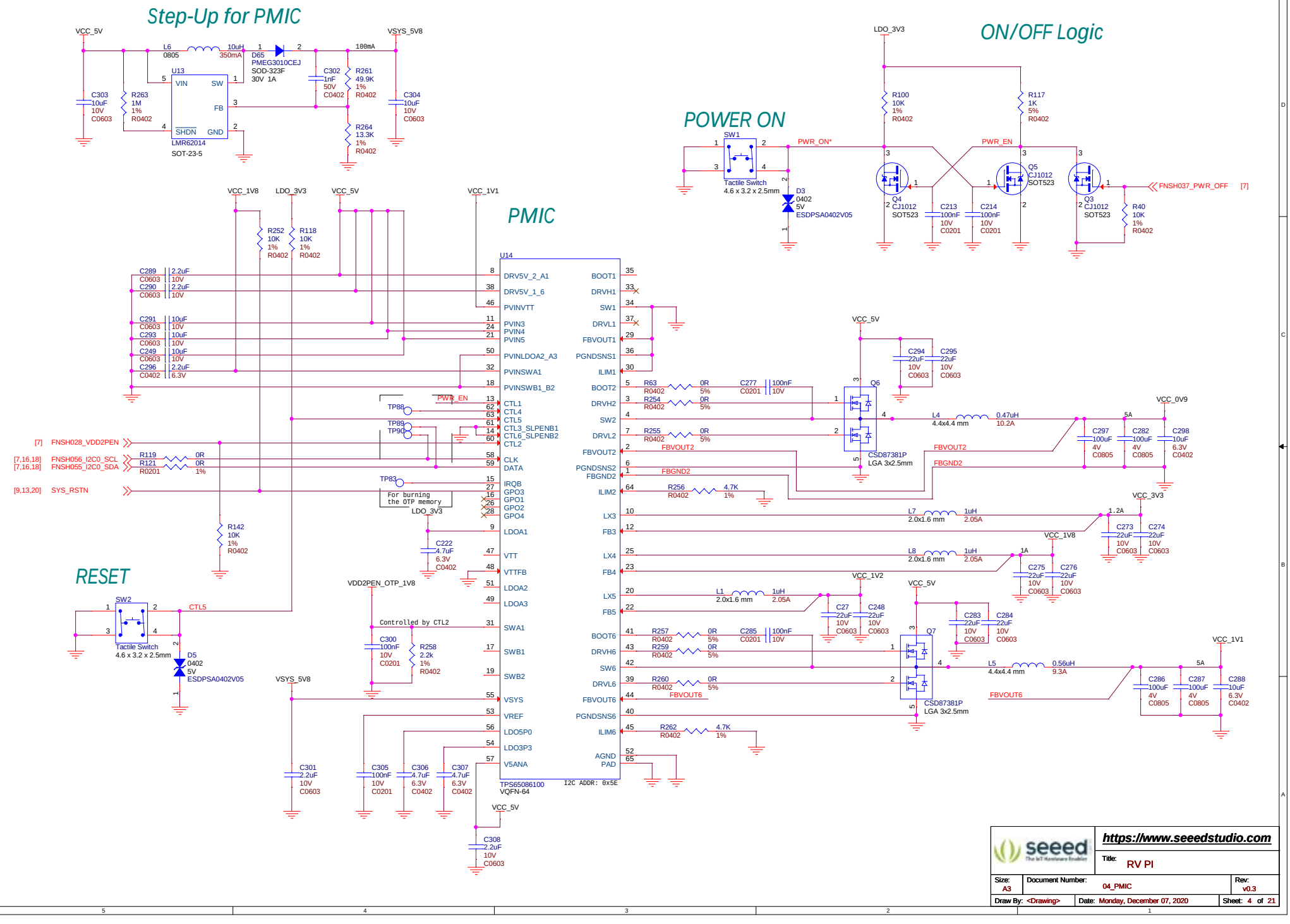
Step-Up for PMIC
VCC_5V
VSYS_5V8
L6
0805
10uH
350mA
D65
PMEG3010CEJ
SOD-323F
30V 1A
100mA
U13
VIN
SW
FB
SHDN
GND
LMR62014
SOT-23-5
C303
10uF
10V
C0603
R263
1M
1%
R0402
C302
1nF
50V
C0402
R261
49.9K
1%
R0402
R264
13.3K
1%
R0402
C304
10uF
10V
C0603
ON/OFF Logic
POWER ON
LDO_3V3
SW1
Tactile Switch
4.6 x 3.2 x 2.5mm
PWR_ON*
PWR_EN
R100
10K
1%
R0402
R117
1K
5%
R0402
D3
0402
5V
ESDPSA0402V05
Q4
CJ1012
SOT523
Q5
CJ1012
SOT523
Q3
CJ1012
SOT523
C213
100nF
10V
C0201
C214
100nF
10V
C0201
R40
10K
1%
R0402
FNSH037_PWR_OFF
[7]
PMIC
VCC_1V8
LDO_3V3
VCC_5V
VCC_1V1
U14
R252
10K
1%
R0402
R118
10K
1%
R0402
C289
2.2uF
C0603
10V
C290
2.2uF
C0603
10V
C291
10uF
C0603
10V
C293
10uF
C0603
10V
C249
10uF
C0603
10V
C296
2.2uF
C0402
6.3V
DRV5V_2_A1
DRV5V_1_6
PVINVTT
PVIN3
PVIN4
PVIN5
PVINLDOA2_A3
PVINSWA1
PVINSWB1_B2
CTL1
CTL4
CTL5
CTL3_SLPENB1
CTL6_SLPENB2
CTL2
CLK
DATA
IRQB
GPO3
GPO1
GPO2
GPO4
LDOA1
VTT
VTTFB
LDOA2
LDOA3
SWA1
SWB1
SWB2
VSYS
VREF
LDO5P0
LDO3P3
V5ANA
BOOT1
DRVH1
SW1
DRVL1
FBVOUT1
PGNDSNS1
ILIM1
BOOT2
DRVH2
SW2
DRVL2
FBVOUT2
PGNDSNS2
FBGND2
ILIM2
LX3
FB3
LX4
FB4
LX5
FB5
BOOT6
DRVH6
SW6
DRVL6
FBVOUT6
PGNDSNS6
ILIM6
AGND
PAD
TPS65086100
VQFN-64
I2C ADDR: 0x5E
PWR_EN
TP88
TP89
TP90
TP83
For burning
the OTP memory
[7] FNSH028_VDD2PEN
[7,16,18] FNSH056_I2C0_SCL
[7,16,18] FNSH055_I2C0_SDA
[9,13,20] SYS_RSTN
R119
R121
R0201
0R
0R
1%
R142
10K
1%
R0402
C222
4.7uF
6.3V
C0402
RESET
SW2
Tactile Switch
4.6 x 3.2 x 2.5mm
CTL5
D5
0402
5V
ESDPSA0402V05
VDD2PEN_OTP_1V8
Controlled by CTL2
C300
100nF
10V
C0201
R258
2.2k
1%
R0402
VSYS_5V8
C301
2.2uF
10V
C0603
C305
100nF
10V
C0201
C306
4.7uF
6.3V
C0402
C307
4.7uF
6.3V
C0402
C308
2.2uF
10V
C0603
VCC_5V
R63
R254
R255
R257
R259
R260
R256
R262
R0402
0R
5%
C277
C285
100nF
10V
C0201
FBVOUT2
FBGND2
FBVOUT6
4.7K
1%
Q6
Q7
CSD87381P
LGA 3x2.5mm
C294
C295
22uF
10V
C0603
L4
4.4x4.4 mm
0.47uH
10.2A
5A
VCC_0V9
C297
C282
C298
100uF
4V
C0805
10uF
6.3V
C0402
L7
2.0x1.6 mm
1uH
2.05A
1.2A
VCC_3V3
C273
C274
22uF
10V
C0603
L8
2.0x1.6 mm
1uH
2.05A
1A
VCC_1V8
C275
C276
22uF
10V
C0603
L1
2.0x1.6 mm
1uH
2.05A
VCC_1V2
C27
C248
22uF
10V
C0603
C283
C284
22uF
10V
C0603
L5
4.4x4.4 mm
0.56uH
9.3A
5A
VCC_1V1
C286
C287
C288
100uF
4V
C0805
10uF
6.3V
C0402
https://www.seeedstudio.com
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RV PI
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A3
Document Number:
04_PMIC
Rev:
v0.3
Draw By:
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Date:
Monday, December 07, 2020
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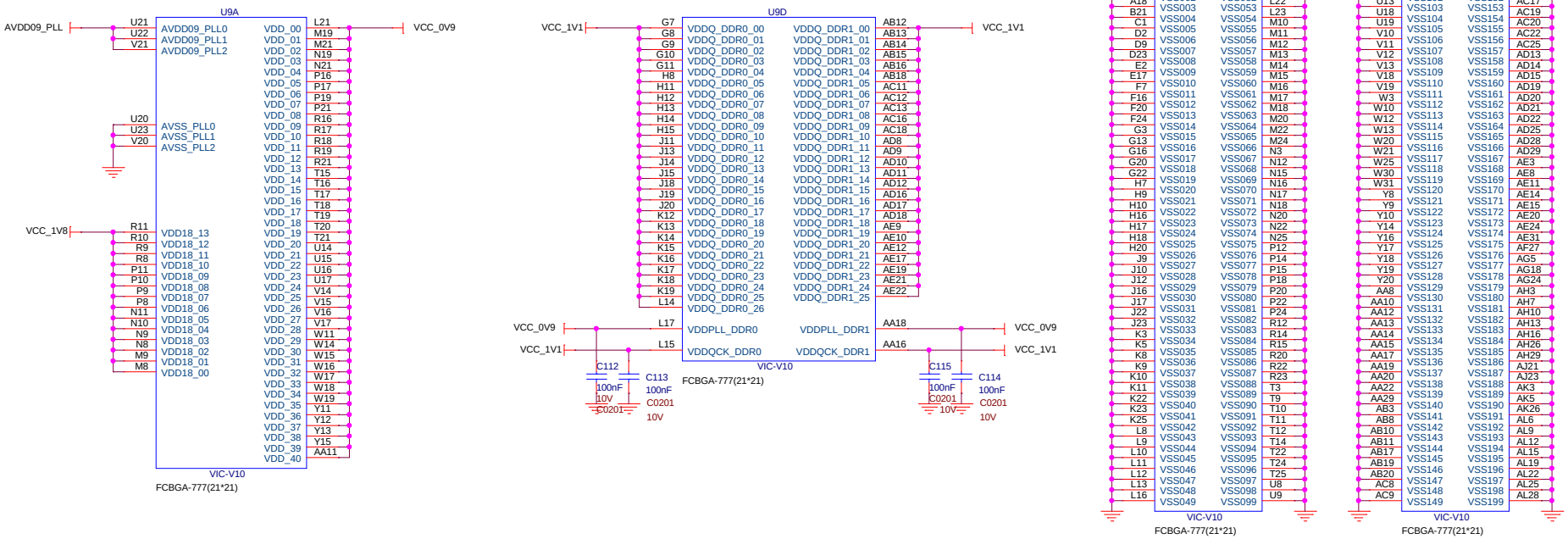
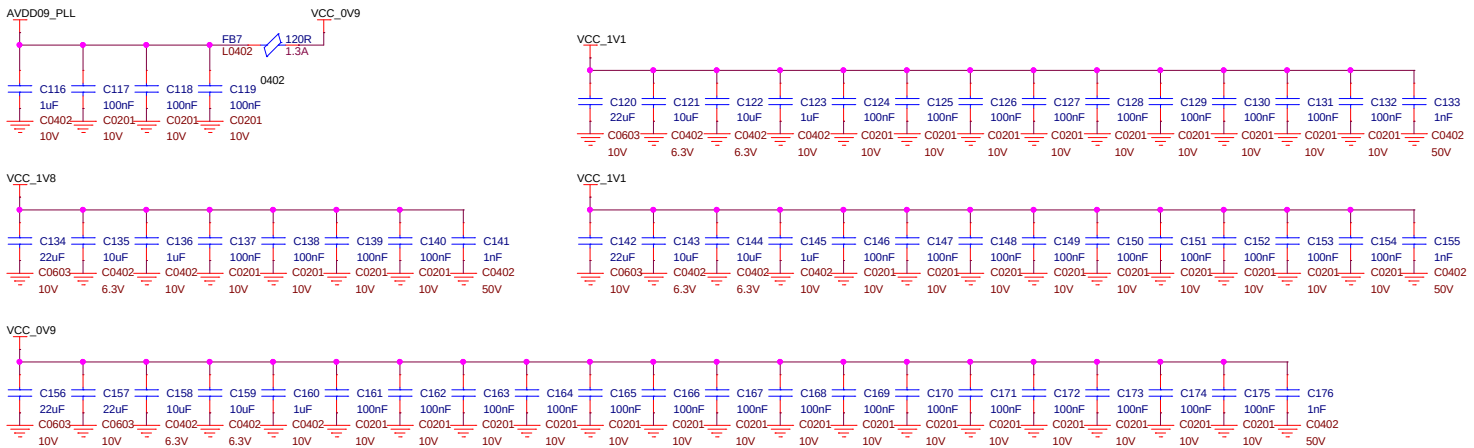
21

VIC Power





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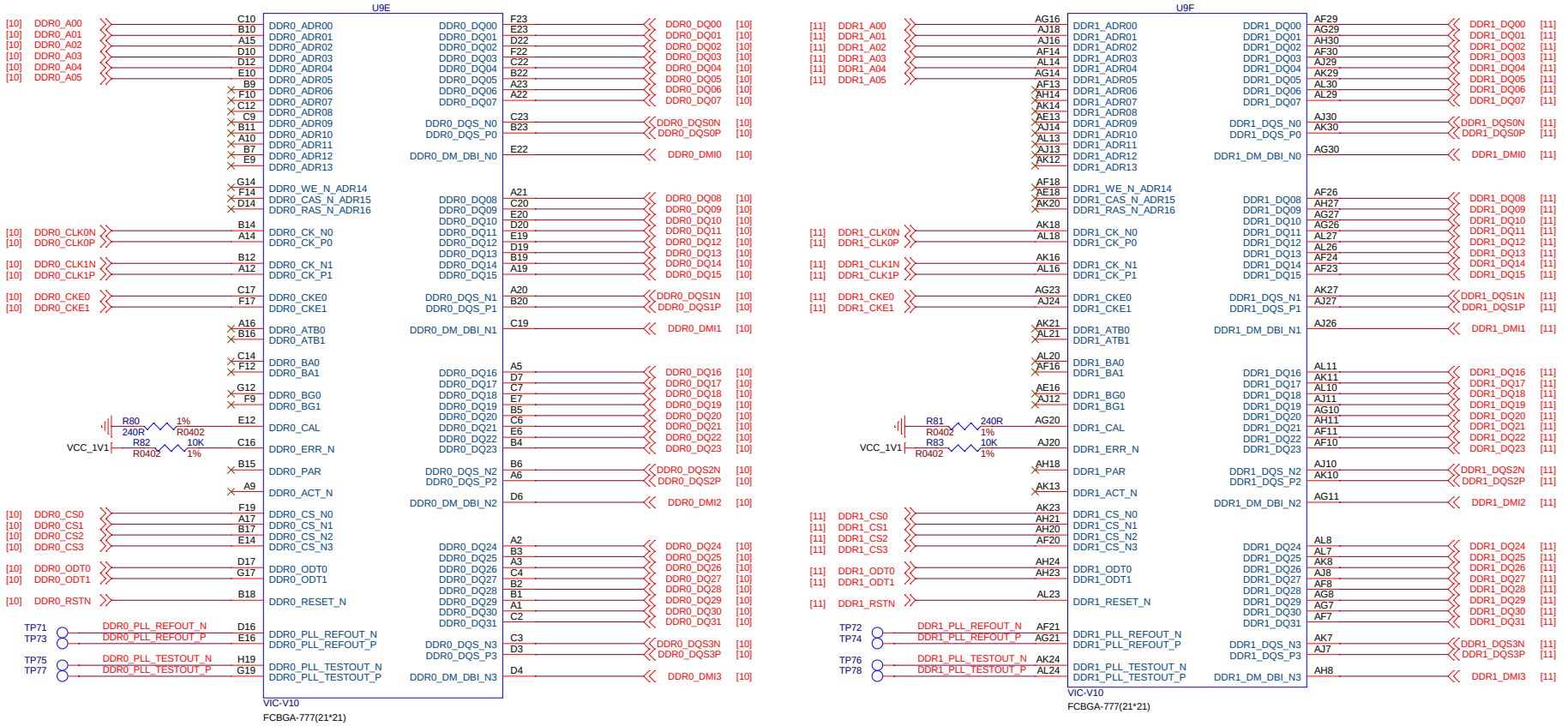
VIC DDR controller



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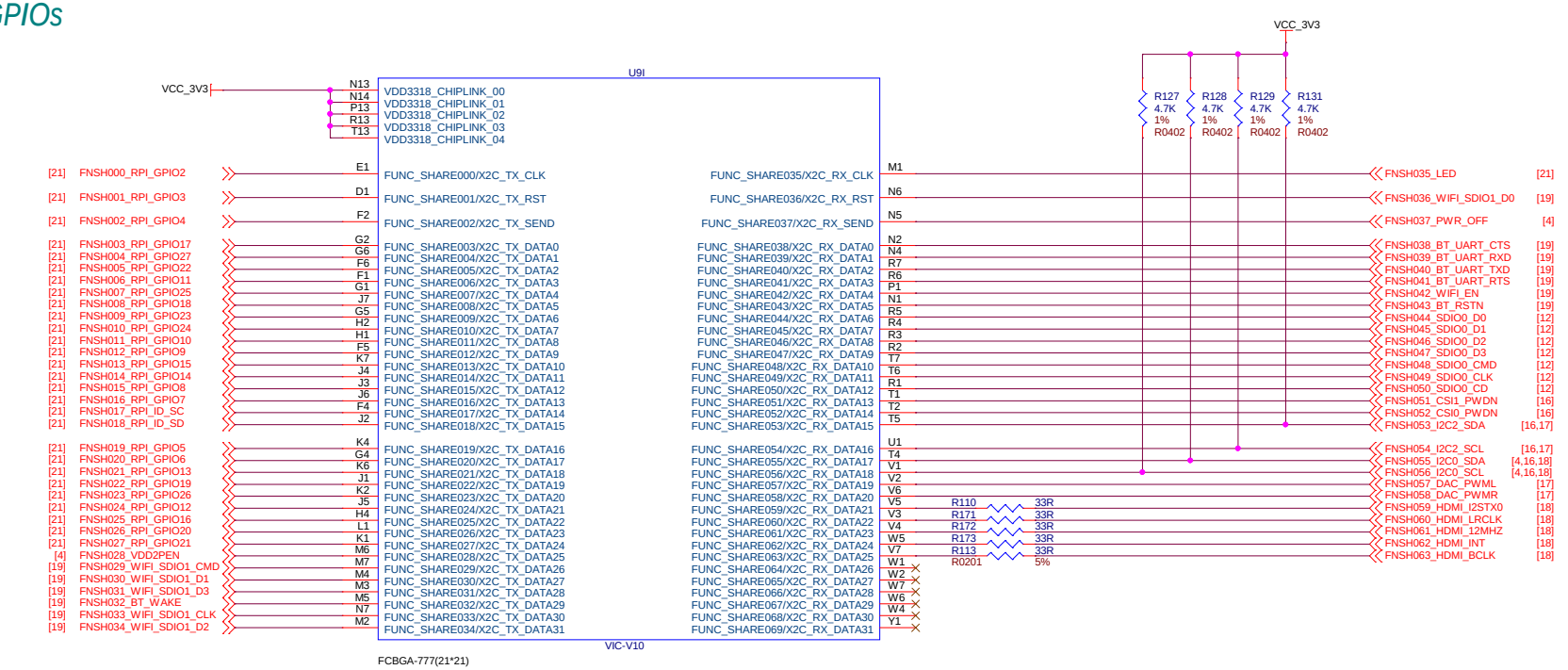
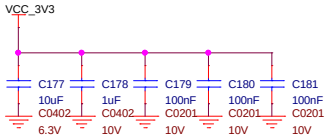
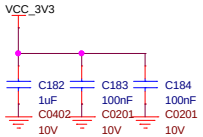
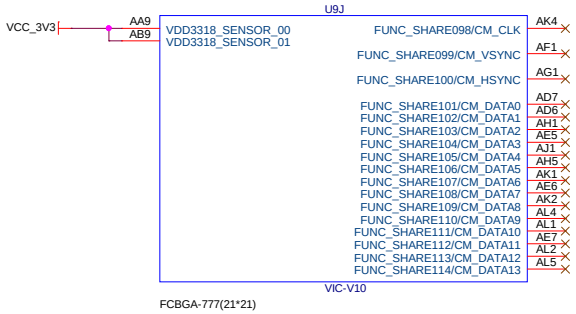
VIC 3.3V GPIOs









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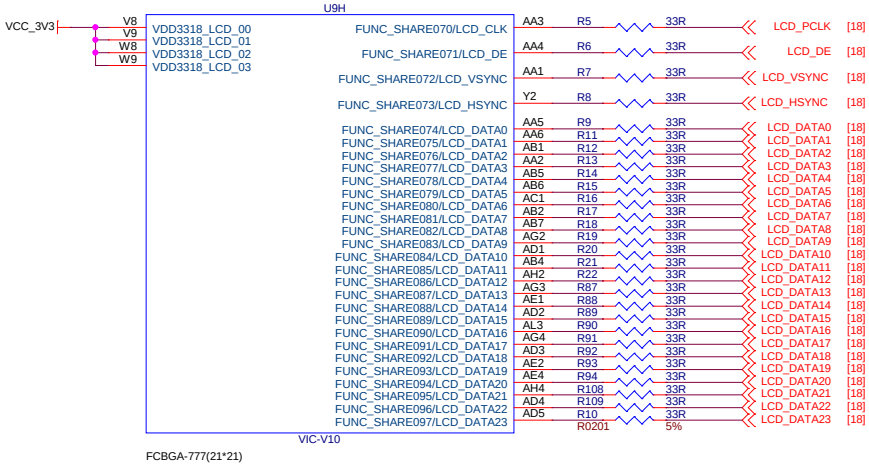
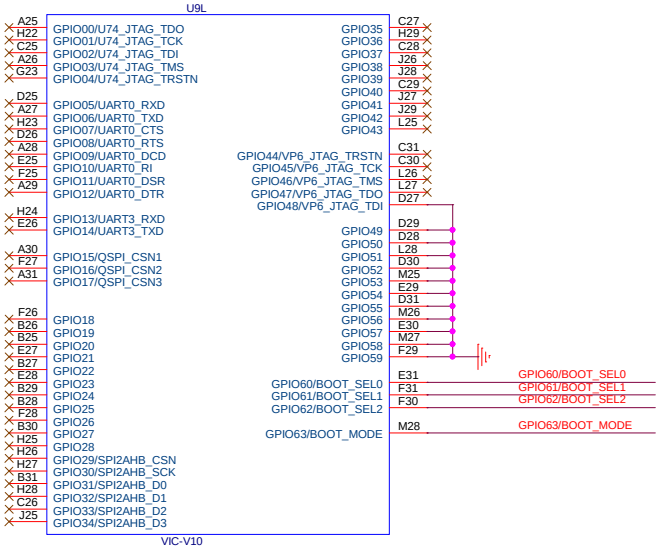
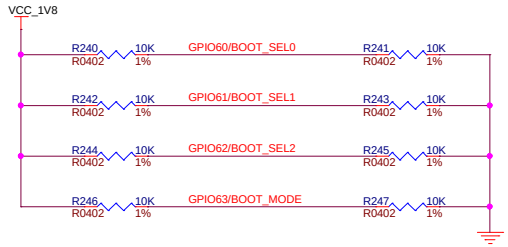
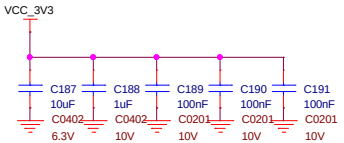
VIC LCD&RGMII

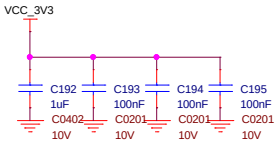




BOOT MODE







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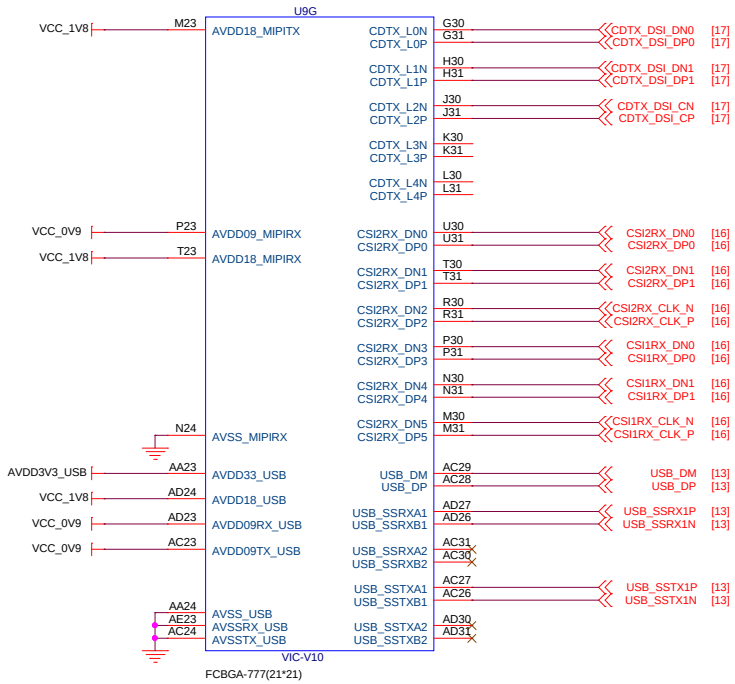
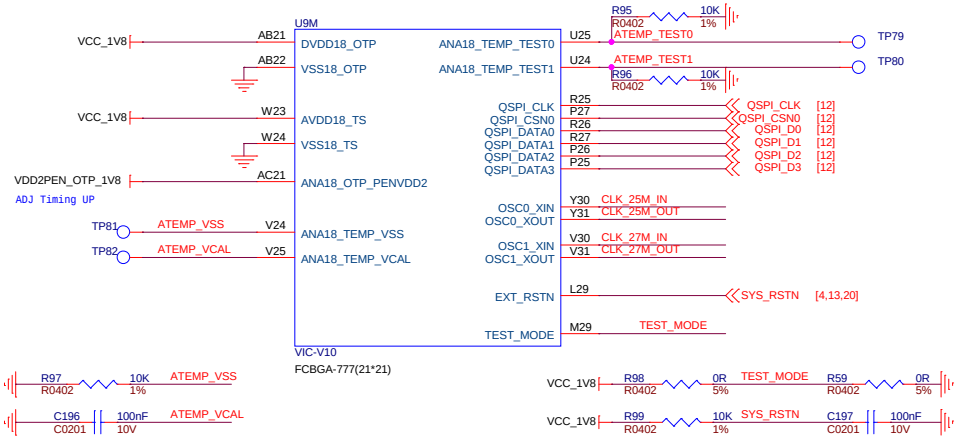
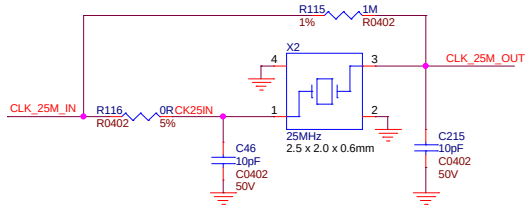
Size: A3	Document Number: 08_VIC LCD & GMII & GPIOs	Rev: v0.3
Draw By: <Drawing>	Date: Monday, December 07, 2020	Sheet: 8 of 21

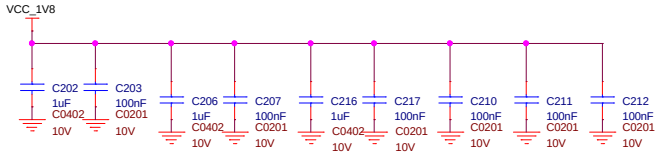
VIC MIPI&USB

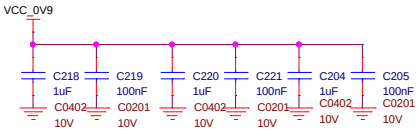


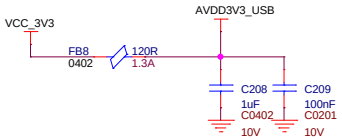
VIC Clock&

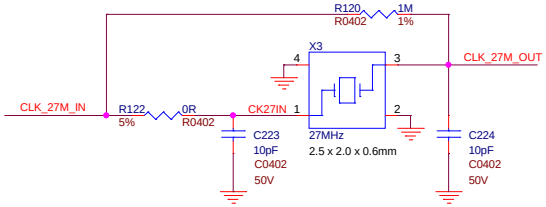












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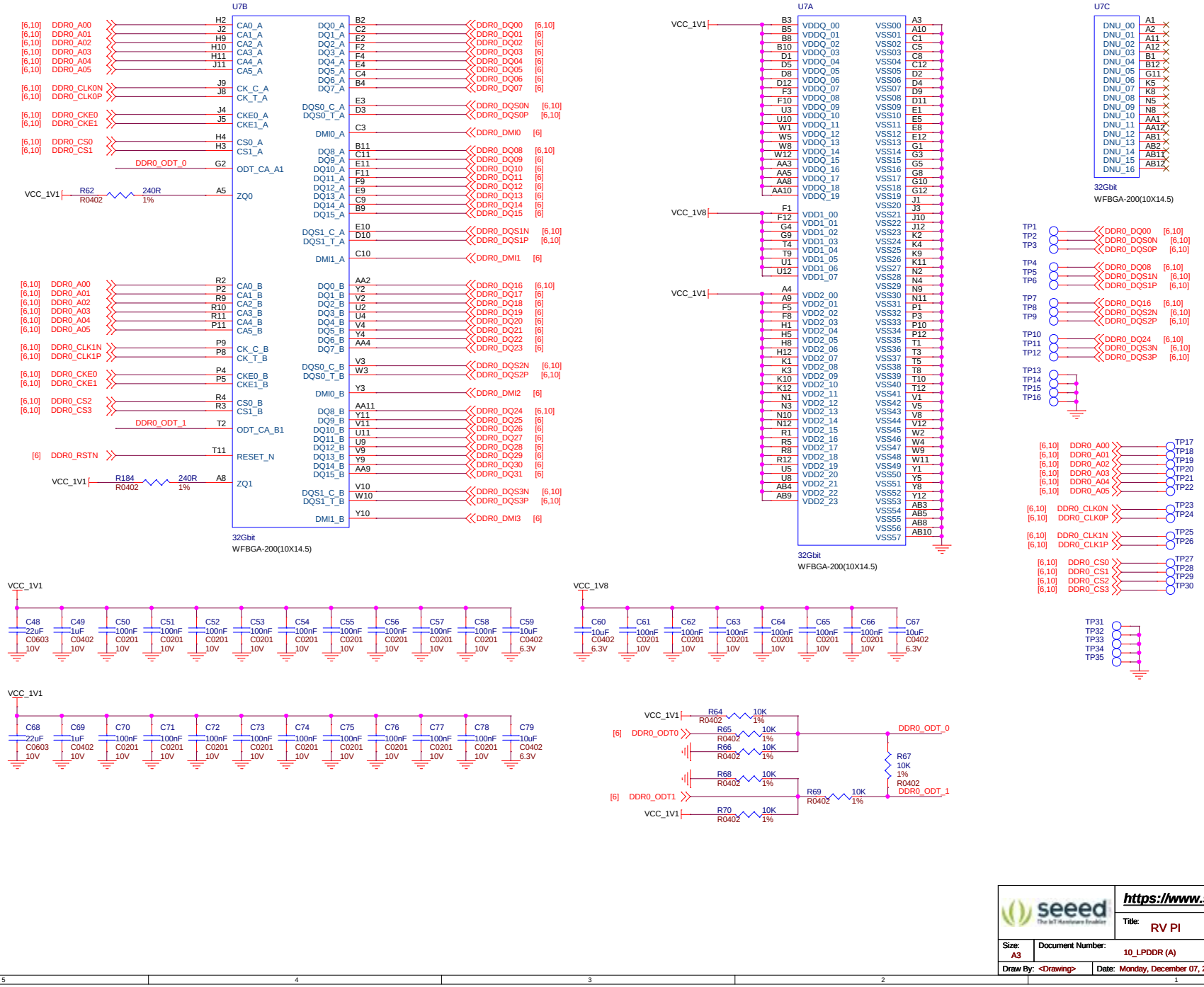
LPDDR4



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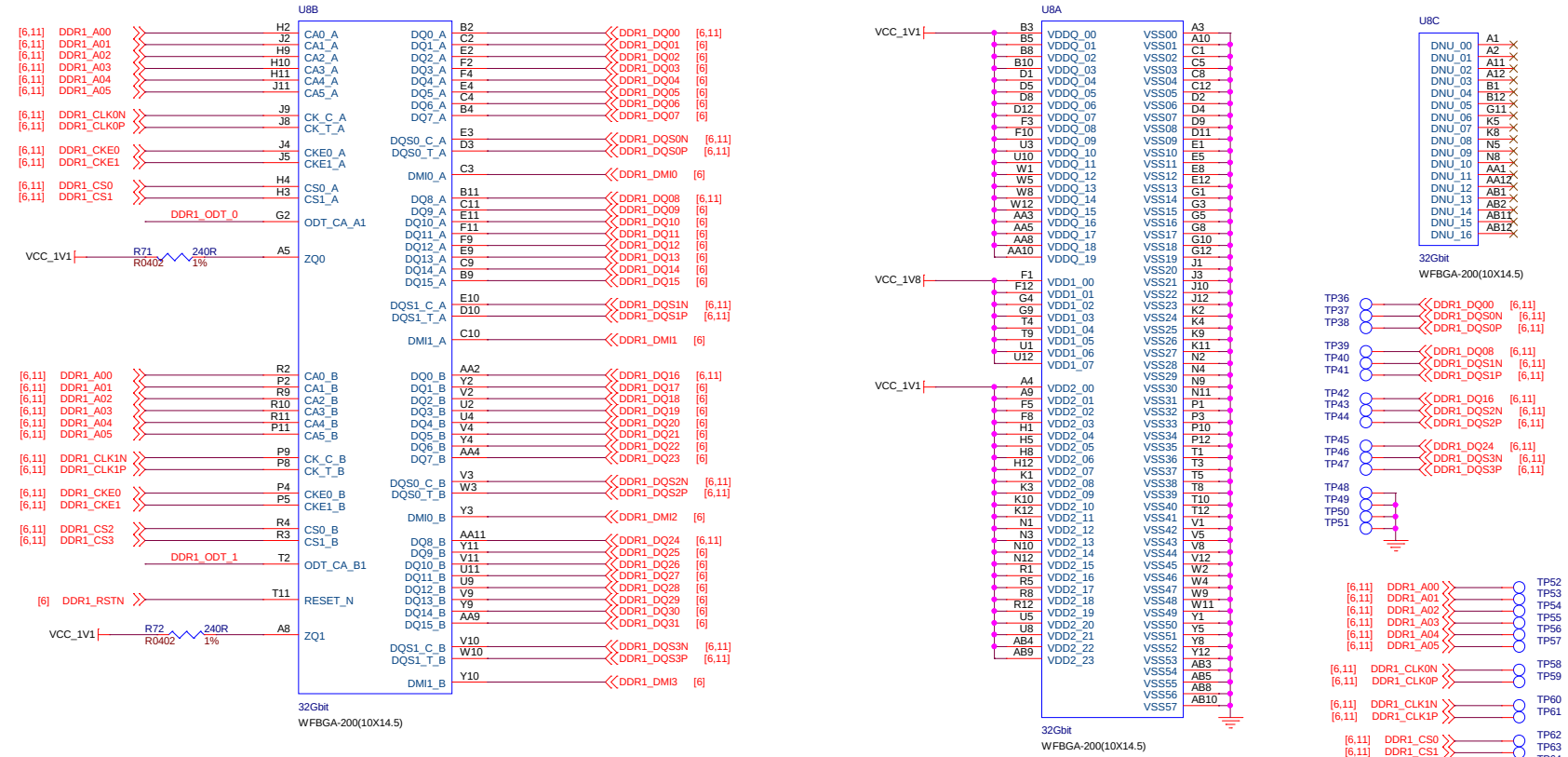
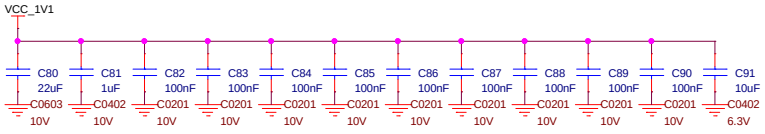
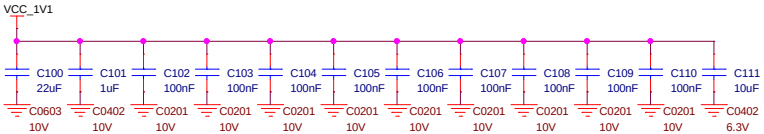
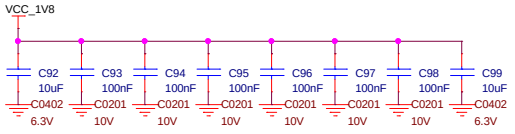
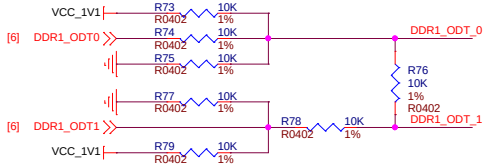
LPDDR4











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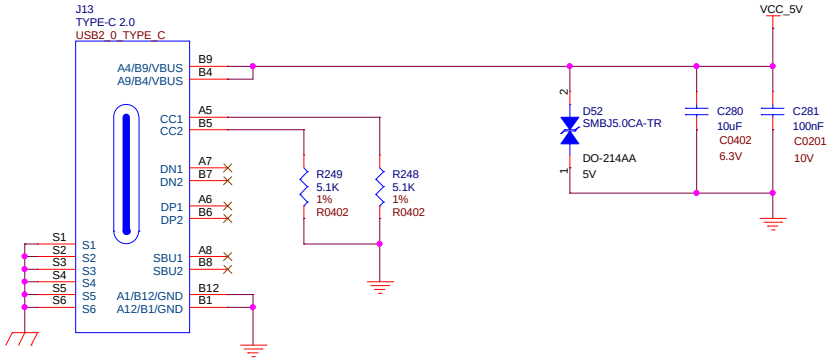
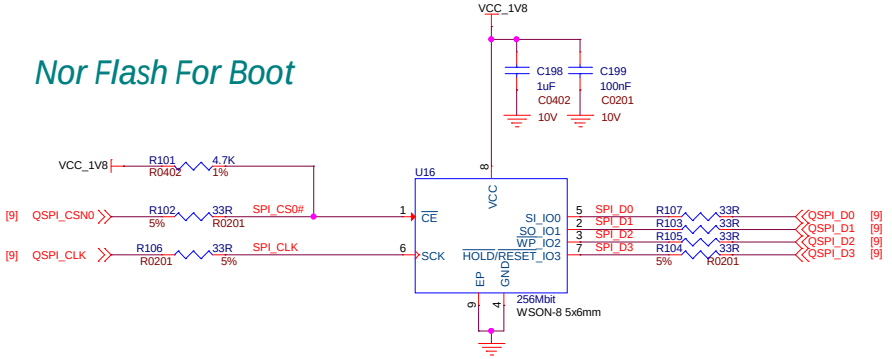
Size: A3	Document Number: 11_LPDDR (B)	Rev: v0.3
Draw By: <Drawing>	Date: Monday, December 07, 2020	Sheet: 11 of 21

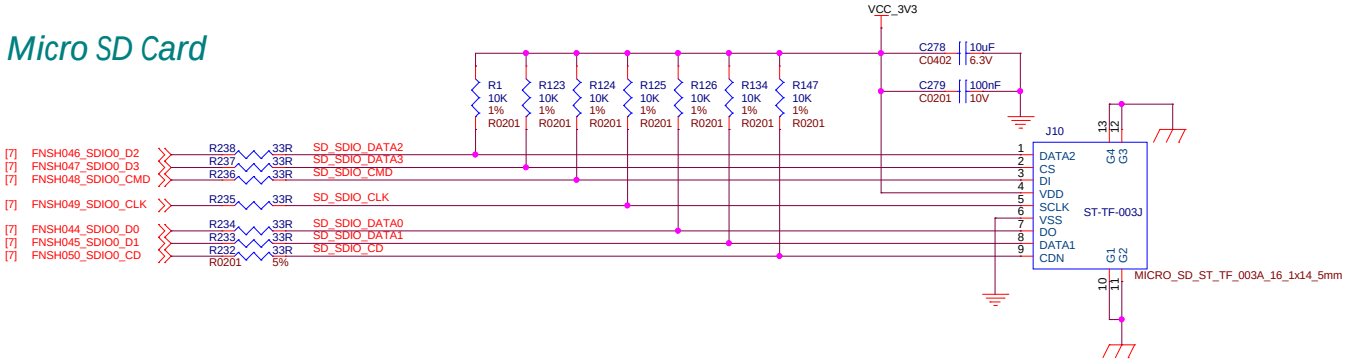
USB Tpye-C Power



Nor Flash For Boot



Micro SD Card



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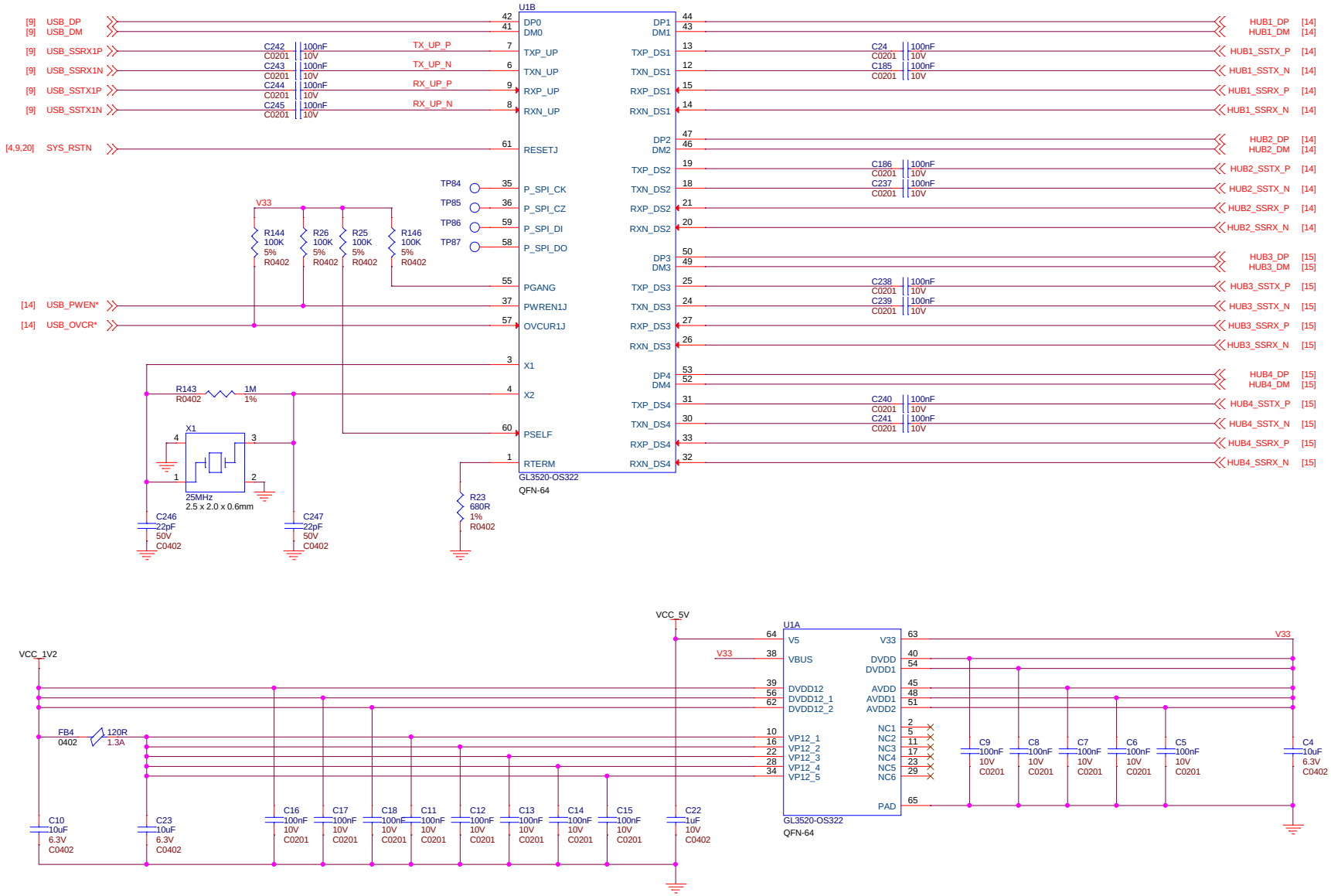
Size: A3	Document Number: 12_Type C,uSD, QSIP Flash	Rev: v0.3
Draw By: <Drawing>	Date: Monday, December 07, 2020	Sheet: 12 of 21

USB 3.0 HUB
TBD



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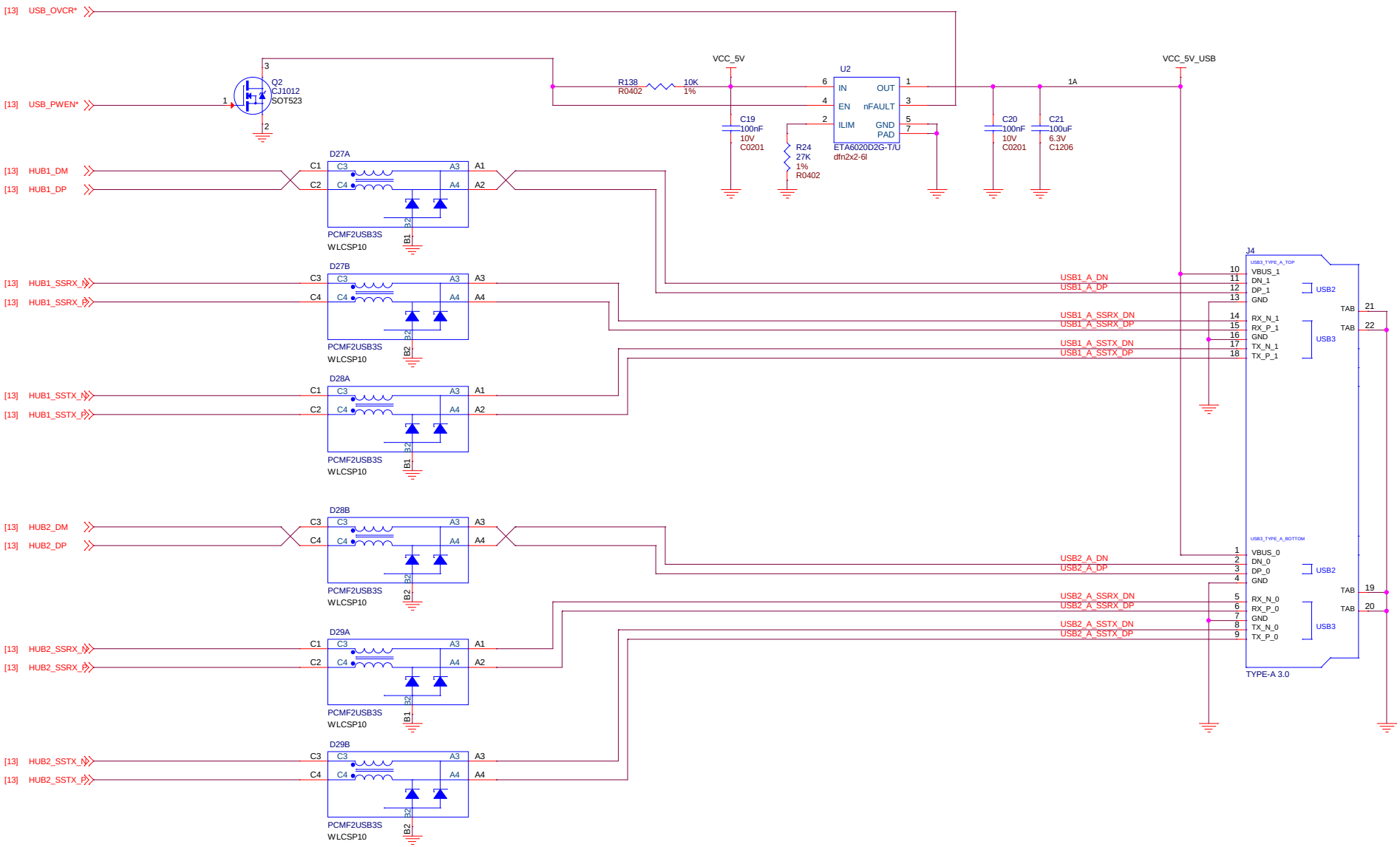
Draw By: <Drawing>	Date: Monday, December 07, 2020		Sheet: 13 of 21

USB 3.0 TYPE A x2



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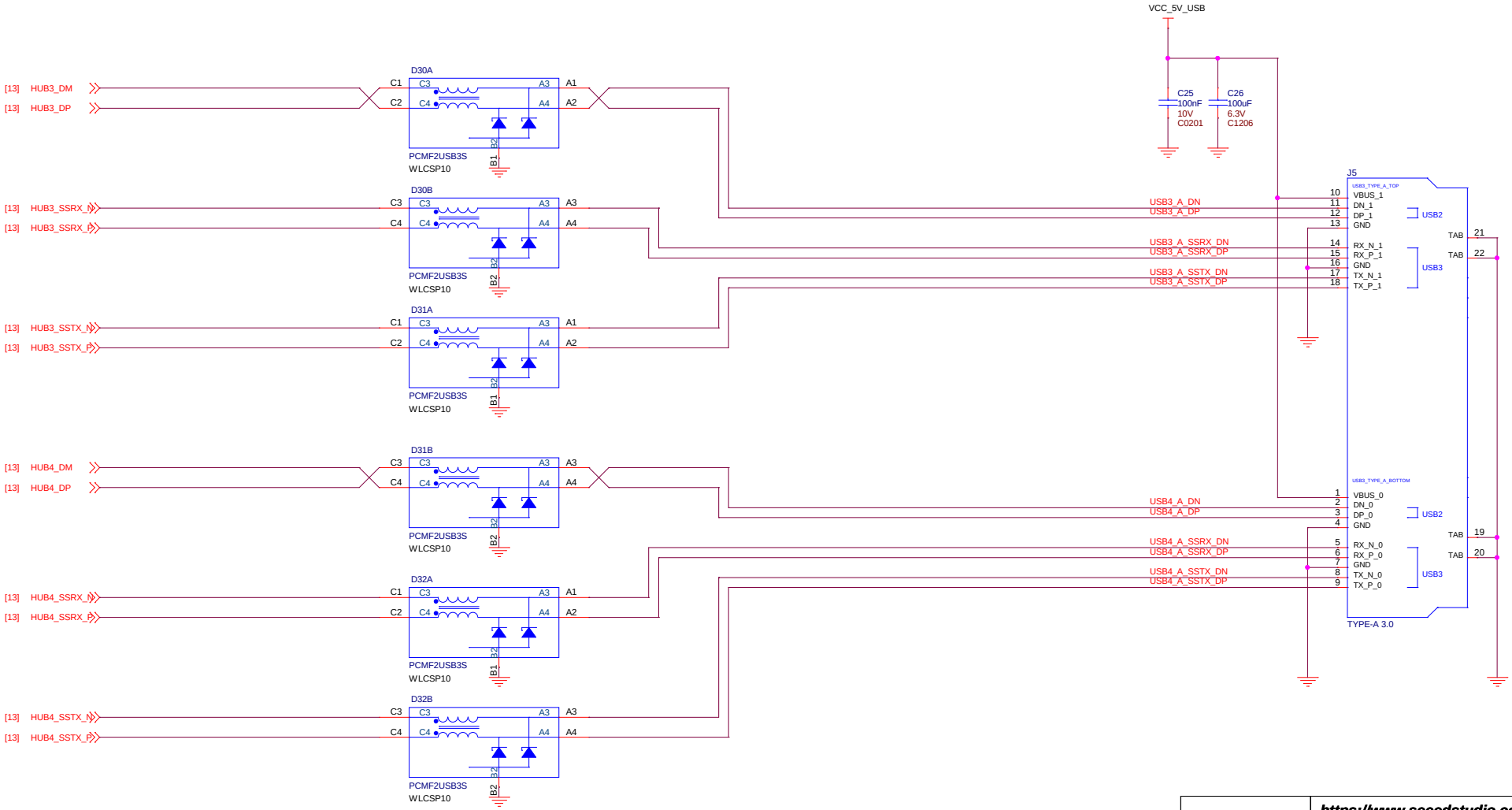
USB 3.0 TYPE A x2



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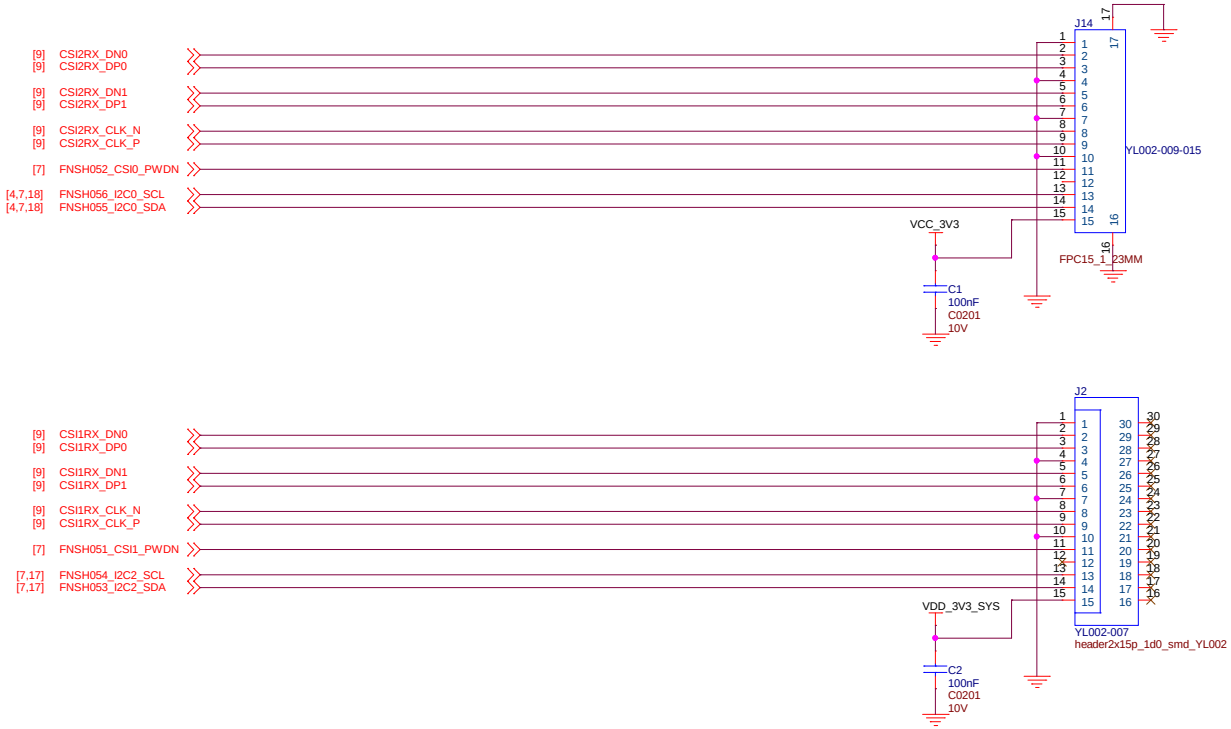
CAMERA CONNECTOR



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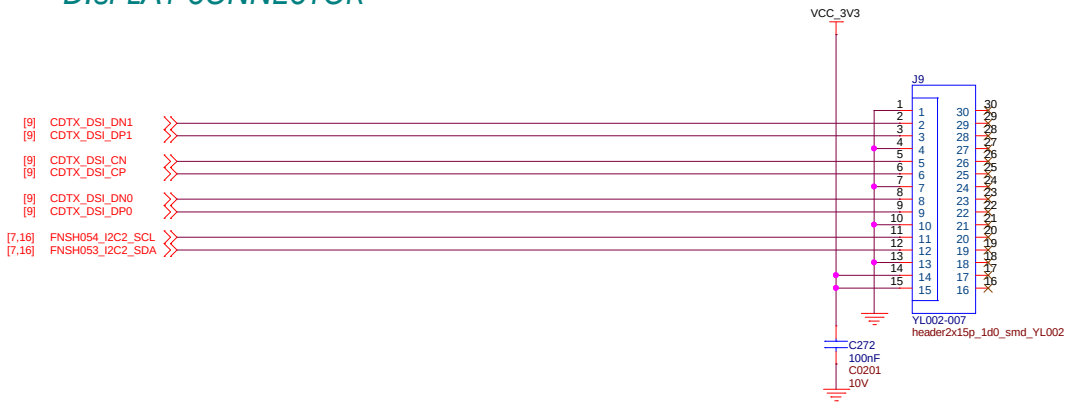
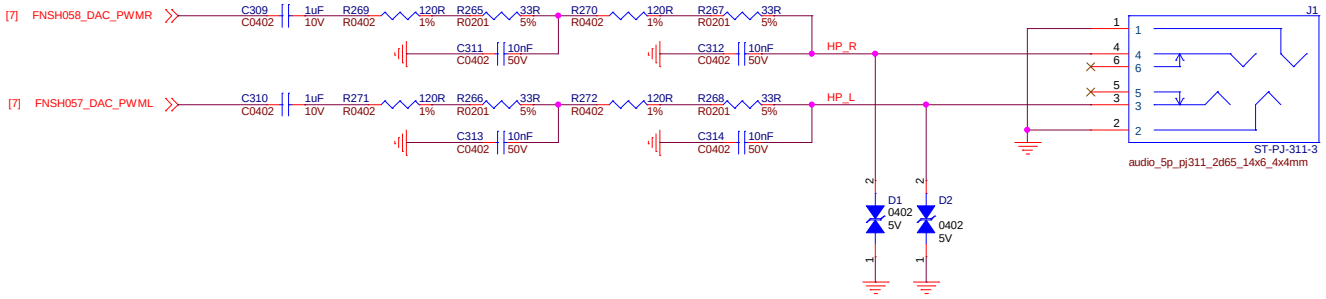
DISPLAY CONNECTOR



AUDIO



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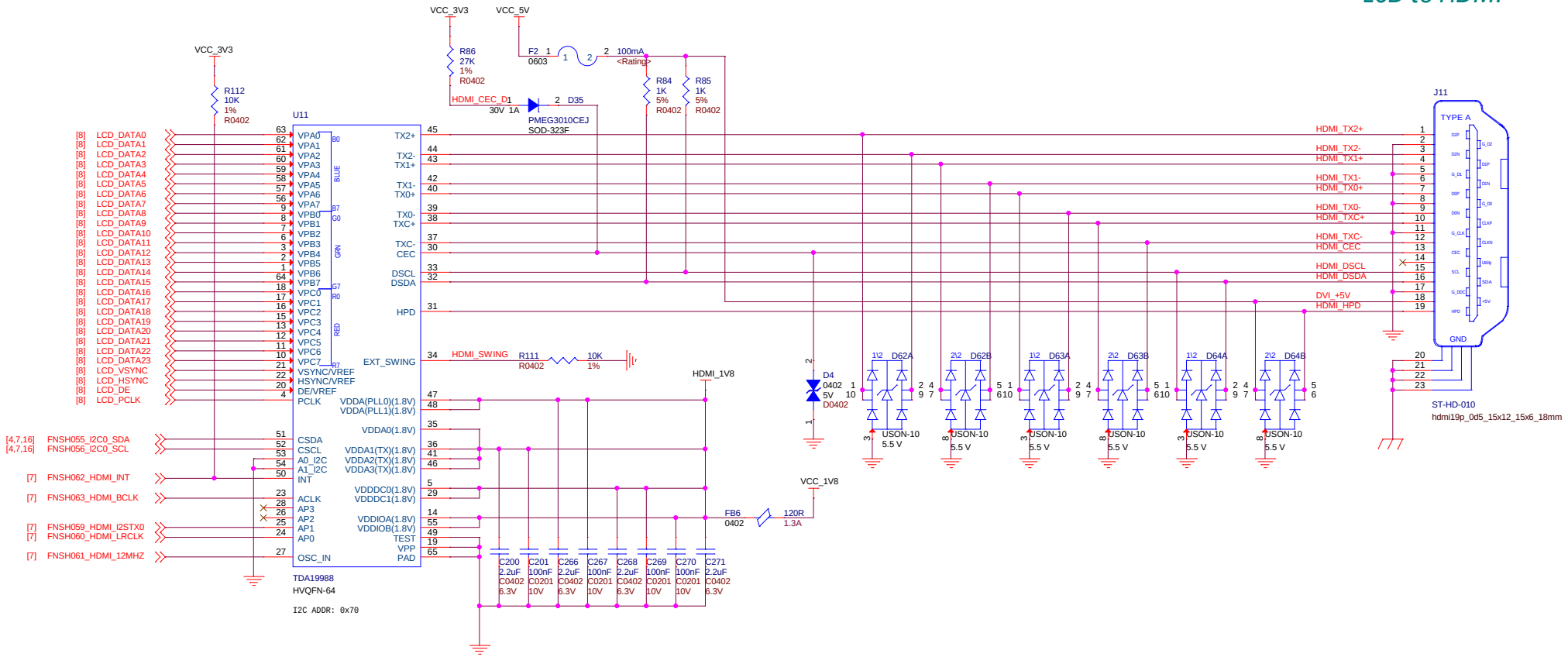
LCD to HDMI



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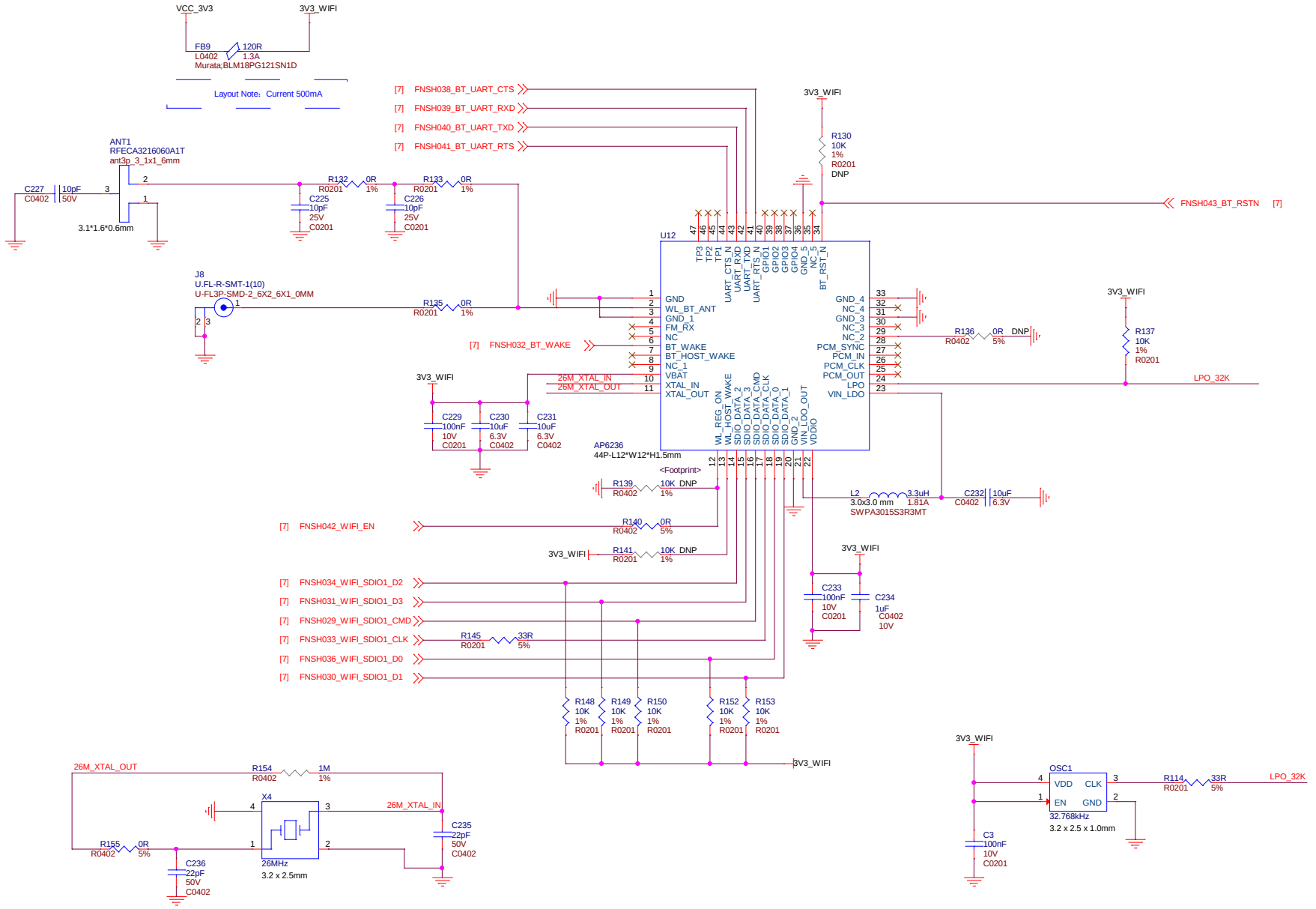
WiFi & Bluetooth



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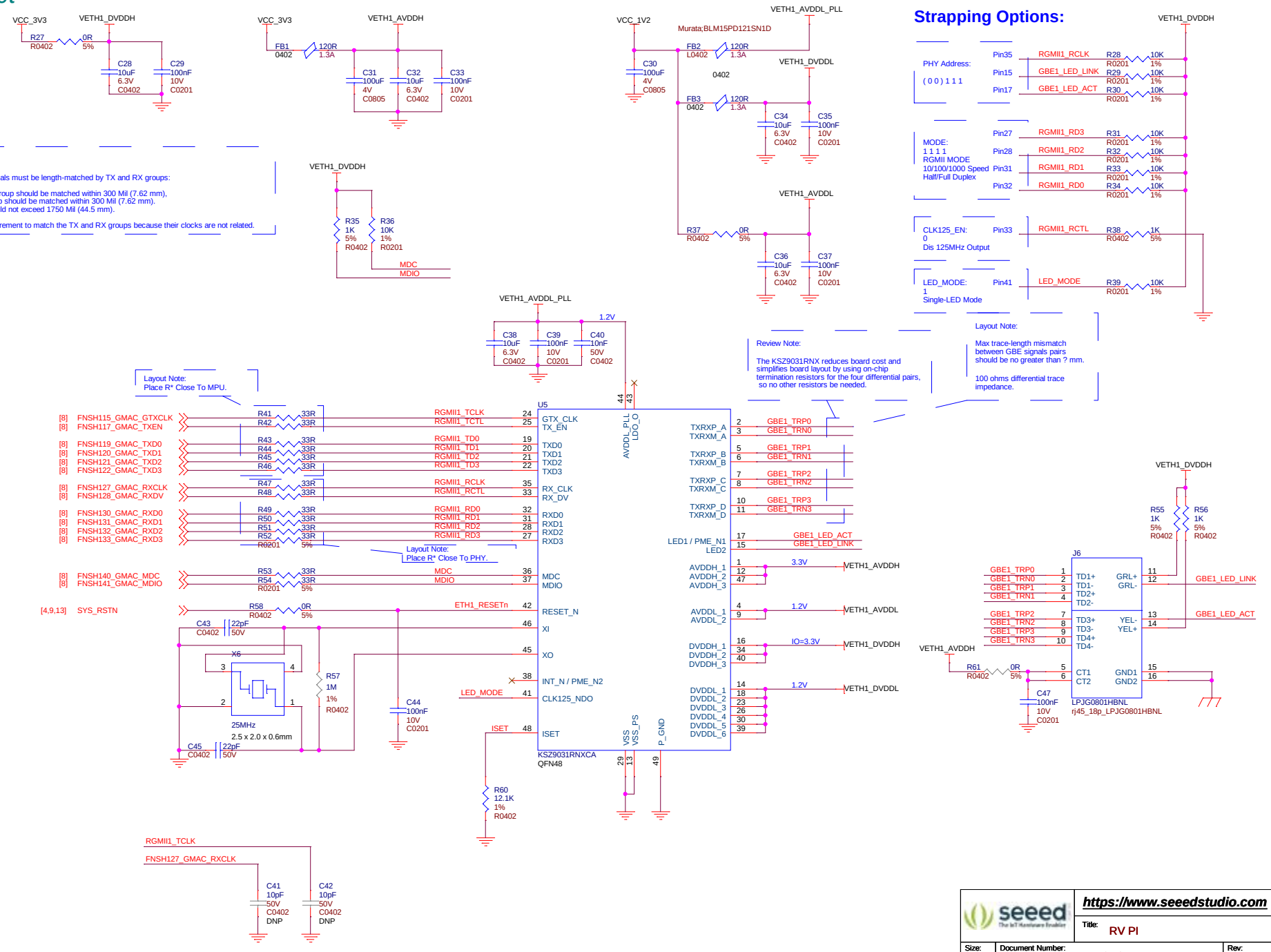
Gigabit Ethernet



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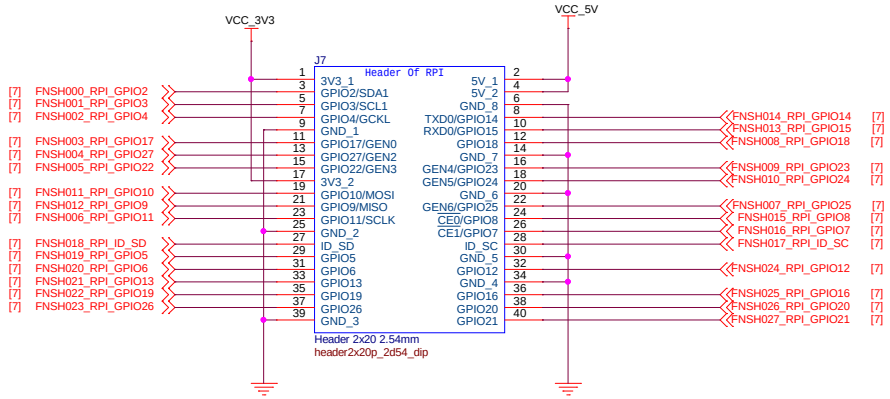
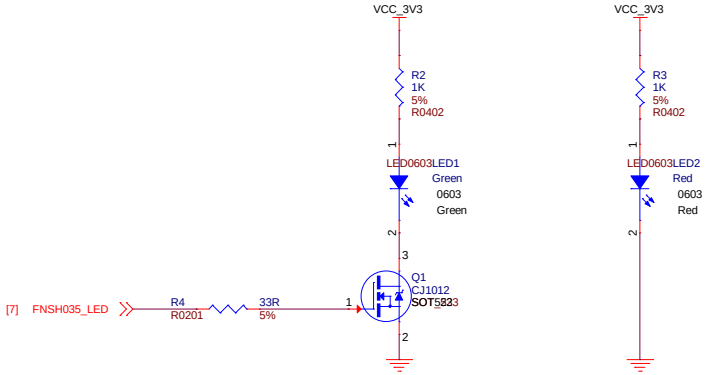
PI connector



ACK&Power LEDs



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